

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte AUGUST SPROCK

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Appeal No. 2006-1457  
Application No. 09/744,485

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HEARD: JUNE 7, 2006

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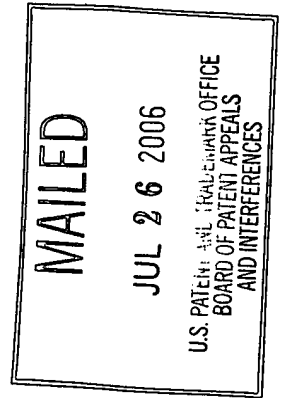
Before GARRIS, PAK and KRATZ, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal which involves claim 5.  
We AFFIRM.

The subject matter on appeal relates to a method for producing dual-phase steels with a two-phase microstructure of 70 to 90 % ferrite and 30 to 10 % martensite via a defined cooling strategy which includes a first slow cooling stage and a second rapid cooling stage. Further details regarding this appealed subject matter are set forth in the appealed claim which reads as follows:



5. A method for producing dual-phase steels from the hot-rolled state with a two-phase microstructure of 70 to 90 % ferrite and 30 to 10 % martensite by a controlled temperature guiding and defined cooling strategy during the cooling of the steels, inter alia by means of water cooling after their finish rolling, wherein in a first cooling stage at a first cooling rate the cooling curve enters the ferrite region and in a second cooling stage at a second cooling rate faster than the first slow cooling rate further cooling is carried out to temperature below the martensite starting temperature, the method comprising the steps of:

carrying out the first cooling stage at a cooling rate of 20-30K/s in a cooling stretch comprised of several water cooling stages positioned successively at a spacing from one another;

allowing the cooling curve in the first cooling stage to enter the ferrite region at a temperature still so high that the ferrite formation takes place quickly; and,

before begin [sic] of the second cooling stage, which follows without intermediate air cooling and holding time directly after the first cooling stage, transforming already at least 70 % of the austenite to ferrite by continuing cooling of the first cooling stage during the transformation of the austenite into the ferrite up to the desired ferrite contents of at least 70 %.

The references set forth below are relied upon by the examiner as evidence of obviousness:

Sudo et al. (Sudo)<sup>1</sup>  
(Published Japanese Patent Application)

57104650

June 29, 1982

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<sup>1</sup>Our understanding of this reference is derived from the English translation thereof which is in the file record.

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Kamikaji et al. (Kamikaji)<sup>2</sup> 62112732  
(Published Japanese Patent Application)

May 23, 1987

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sudo in view of Kamikaji.

Rather than reiterate the respective positions advocated by the appellant and by the examiner concerning the above noted rejection, we refer to the brief and reply brief and to the answer for a complete exposition thereof.

#### OPINION

For the reasons expressed in the answer and below, we will sustain this rejection.

As an initial matter, we observe that the appellant has not contested with any reasonable specificity the examiner's conclusion that it would have been obvious for one with ordinary skill in this art to effect the cooling step of Sudo's method via successively positioned and spaced cooling water stages of the type taught by Kamikaji. Instead, the appellant argues that the applied prior art, and in particular Sudo, contains no teaching or suggestion of the claim feature.

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<sup>2</sup>In applying the Kamikaji reference, the examiner has relied only on figure 1 and the English language abstract of this reference which is in the file record.

"allowing the cooling curve in the first cooling stage to enter the ferrite region at a temperature still so high that the ferrite formation takes place quickly" or the claim feature "before begin [sic] of the second cooling stage . . . transforming already at least 70 % of the austenite to ferrite by continuing cooling of the first cooling stage during the transformation of the austenite into ferrite up to the desired ferrite contents of at least 70 %." This argument is unpersuasive.

Considering first the last mentioned claim feature, Sudo teaches that his first cooling stage or cooling speed  $C_1$  effects transformation to a ferrite structure to a degree that is "desirably, at least 80%" (translation page 12, first full paragraph). In light of this disclosure, we are convinced that Sudo teaches or at least would have suggested transformation into ferrite up to at least 70 % during the first cooling stage as required by the appealed claim.

As for the other claim feature wherein ferrite formation takes place quickly in the first cooling stage, we cannot agree with the appellant that Sudo contains no teaching or suggestion of this feature. Concerning this matter, it is appropriate to

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emphasize that the appellant offers no guidance of any kind on how "quickly" this ferrite formation takes place according to the appealed method. We additionally emphasize that the method of Sudo necessarily effects ferrite formation in the first cooling stage "quickly" enough to obtain "desirably, at least 80 %" ferrite structure. Id. For these reasons, we are convinced that Sudo's method satisfies the claim limitation under review when interpreted as broadly as its terms reasonably allow. See In re Zletz, 893 F.2d 319, 322, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

In light of the foregoing, it is our determination that the reference evidence adduced by the examiner establishes a prima facie case of obviousness which the appellant has failed to successfully rebut with argument or evidence of nonobviousness. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). We hereby sustain, therefore, the examiner's Section 103 rejection of claim 5 as being unpatentable over Sudo in view of Kamikaji.


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The decision of the examiner is affirmed.

No time period for taking any subsequent action in  
connection with this appeal may be extended under 37 CFR  
§ 1.136(a).

AFFIRMED

  
BRADLEY R. GARRIS )  
Administrative Patent Judge )

  
CHUNG K. PAK )  
Administrative Patent Judge )

  
PETER F. KRATZ )  
Administrative Patent Judge )

BOARD OF PATENT  
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